

Shp 23/06 !!

Work Order ID 70958



Monday, June 20, 2011 11:20:34 AM

Item ID: D2003-011A

Accept



Setup Start



Revision ID:

Stop



Item Name: Tube Assembly-8J

Start Date: 6/20/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 6/24/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D2003

Rev U/R

OK of 11.06.20

100

0.00



Small Fab

Memo

0.00

Small Fab

1- Cut tubing 32.38" long

2- Form tube as per dwg D2003-011

3-Cut fire sleeve 33.31" long

4-install sleeve nut and fire sleeve, flare ends as per dwg

5-install label with heat shrink

SB 11/06/21

PTO

110

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

SB 11/06/22

QC

Work Order ID 70958

Monday, June 20, 2011 11:20:34 AM



Page 2

Item ID: D2003-011A

Accept



Setup Start



Revision ID:

Stop



Item Name: Tube Assembly-8J

Start Date: 6/20/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 6/24/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

Identify as per dwg & Stock Location: _____

0.00



Packaging

Memo

0.00

Packaging

QC 21

11/6/22

11/6/22

MF 11-06-22

Picklist Print

Monday, June 20, 2011 11:20:32 AM

Page 1

Work Order ID: 70958

Parent Item: D2003-011A

Parent Item Name: Tube Assembly-8J



Start Date: 6/20/2011

Required Date: 6/24/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP revA 11.06.20 new issue EC verified by: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN818-6D Nut		Purchased	No			100	Each	26.0000	2	2			
				<u>Location</u>			<u>Loc Qty</u>	<u>Loc Code</u>					
				ST331			26						
				114988			26						
D2182-045 Heat Shrink 4.5" Long		Manufactured	No			100	Each	0.0000	1	1			
M2650-6 Firesleeve-crkl .375IDia		Purchased	No			100	f	56.0000	2.75	2.75			
				<u>Location</u>			<u>Loc Qty</u>	<u>Loc Code</u>					
				ST420A			56						
				112195			26						
				114341			30						
M6061T6T0.375W.035 6061-T6 RD Tube .375 x.035W		Purchased	No			100	f	228.5600	2.75	2.75			
				<u>Location</u>			<u>Loc Qty</u>	<u>Loc Code</u>					
				MAT014			228.56						
				104913			34.5						
				112652			194.06						

Picklist Print

Monday, June 20, 2011 11:20:32 AM

Page 2

Work Order ID: 70958



Parent Item: D2003-011A



Parent Item Name: Tube Assembly-8J

Start Date: 6/20/2011

Required Date: 6/24/2011

Start Qty: 1.00

Required Qty: 1.00

MS20819-6D

Purchased

No

100

Each

34.0000

2

2



86 11/06/21

Sleeve

Location

Loc Qty

Loc Code

ST323

34

114884

9

116289

25

2

Monday, June 20, 2011 11:20:32 AM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D2003-011A PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: Date: 01/12/12
 QA: N/C Closed: _____ Date: _____

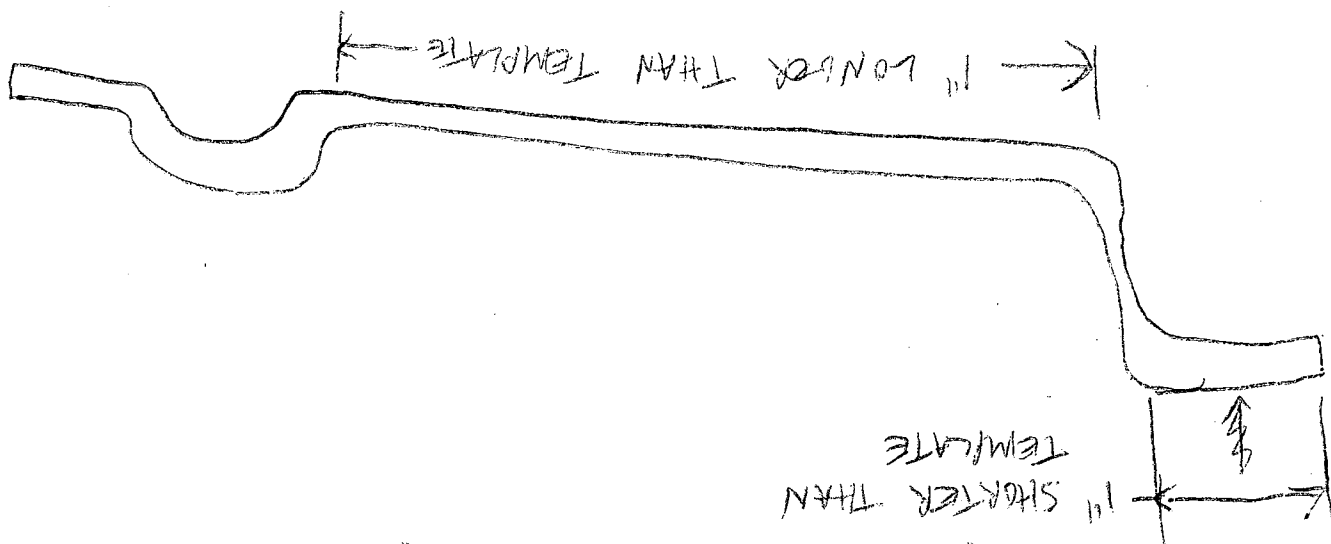
NCR: <u>70958</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
7/12/12	6.0	1" LONGER IN ONE AREA AND 1" SHORTER IN ANOTHER AREA COMPARED TO TEMPLATE (SEE ATTACHED DRAWING)	LE 07/12/12	Requred per DI visit to Highlow.	LE 07/12/12	✓ 7/12/13	LE 07/12/12	✓ 7/12/13

NOTE: Date & initial all entries

W/o 36282

SP 11.06.20 QSI 042

VE 07.12.12





DESIGN <i>JE</i>	DRAWN BY <i>SP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>JE</i>	APPROVED <i>SP</i>	DRAWING NO. D2003	REV. 8 SHEET 1 OF 2
DATE 99.06.08		TITLE 206 CABIN HEATER TUBE ASSEMBLIES NTS	
A	90.04.09	NEW ISSUE	
B	99.06.08	UPDATE PER TEMPLATES; ADD P/N'S; 0.025 TUBING NOW 0.035 (TSR1049)	

RELEASED
99.06.08 KE

UNDER REVIEW

06.08.21 CB

some flat
lengths wrong

P/N	TEMPLATE	HEATSLEEVE LENGTH ¹	CUT LENGTH OF TUBE ²	MS20819-8J SLEEVE	AN818-8J NUT	MS20819-8D SLEEVE	AN818-8D NUT	MS20819-6D SLEEVE	AN818-6D NUT	DESC.	MATERIAL ^{4/8/7}	VENDOR OR SPEC
D2003-001	T2003-001	5.2	6.00					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-003	T2003-003	7.3	8.12					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-005	T2003-005	9.8	10.62					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-007	T2003-007	20.0	19.63					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-009	T2003-009	12.38	12.44					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-011	T2003-011	33.31	32.38					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-013	T2003-013	12.7	13.54					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-015	T2003-015	17.2	18.00					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-017	T2003-017	17.0	16.25					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-019	T2003-019	9.8	10.62			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-700/6
D2003-021	T2003-021	N/A	2.25			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-700/6
D2003-023	T2003-023	4.5	5.33			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-700/6
D2003-025	T2003-025	9.8	10.60			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-700/6
D2003-027	T2003-027	7.25	7.38			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-700/6
D2003-029	T2003-029	17.2	18.00			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-700/6
D2003-031	T2003-031	14.6	15.38	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-033	T2003-033	29.75	29.62	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-035	T2003-035	24.7	27.00	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-037	T2003-037	24.81	23.38	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-039	T2003-039	34.0	34.00	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-041	T2003-041	6.0	5.88	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-043	T2003-043	11.7	10.75	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-045	T2003-045	3.50	2.44	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-047	T2003-047	5.56	5.56	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-049	T2003-049	33.2	34.00	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-077	T2003-077	N/A	6.25					1	1	JET	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-101	T2003-101	13.25	13.13					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-600/6
D2003-103	T2003-103	12.38	12.00					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-600/6
D2003-105	T2003-105	10.75	10.60					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-600/6
D2003-107	T2003-107	12.75	12.25					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-600/6
D2003-109	T2003-109	8.25	8.125			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-600/6
D2003-111	T2003-111	4.75	4.625			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-600/6
D2003-116	T2003-116	4.0								HEATSLEEVE	M2650-20 CRINKLE-SOFT	STRATOFLEX
D2003-120	T2003-120	4.0								HEATSLEEVE	M2650-16 CRINKLE-SOFT	STRATOFLEX
D2003-14	T2003-14	4.0								HEATSLEEVE	M2650-14 CRINKLE-SOFT	STRATOFLEX
D2003-16	T2003-16	4.0								HEATSLEEVE	M2650-16 CRINKLE-SOFT	STRATOFLEX
D2003-205	T2003-205	9.75	9.60					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-207	T2003-207	3.75	3.75					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6



DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2003	REV. B SHEET 2 OF 2
DATE 99.06.08		TITLE 206 CABIN HEATER TUBE ASSEMBLIES NTS	

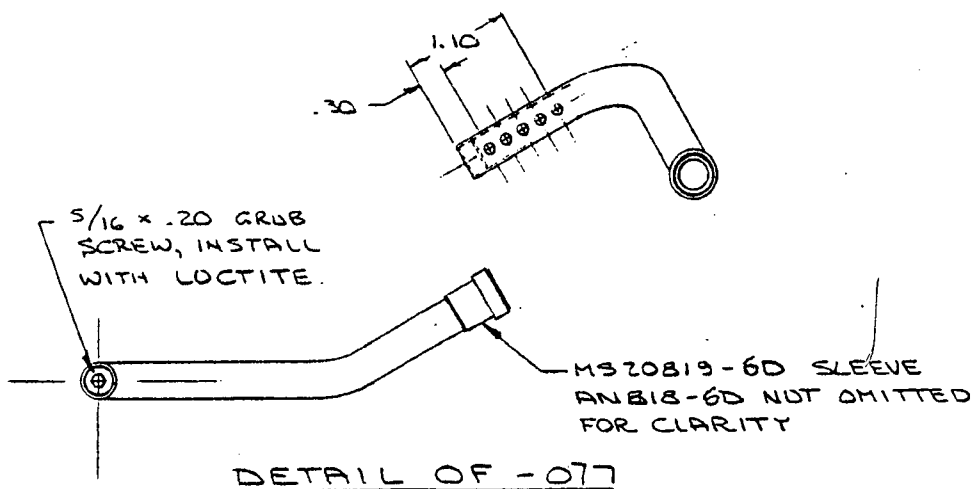
RELEASED
99.06.08 KE

UNDER REVIEW

06.08.21 CB
*Some Flat lengths
not wrong*

Notes:

- (1) USE STRATOFLEX M2650-6 CRINKLE-SOFT HEATSLEEVE.
- (2) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATES.
- (3) TUBES TO BE FLARED 30° TO MATE WITH FITTINGS MADE TO MS33514.
- (4) ENSURE SEAMLESS TUBING IS USED.
- (5) INSTALL HEATSLEEVE OVER ALL TUBES WITH A DESIGNATED LENGTH OF HEATSLEEVE PER THE PARTS LIST.
- (6) 5052 (WW-T-700/4) TUBING MAY BE SUBSTITUTED WHEN 6061 TUBING IS NOT AVAILABLE.
- (7) 0.049 WALL THICKNESS CRES TUBING MAY BE SUBSTITUTED WHEN 0.035 IS NOT AVAILABLE.
- (8) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.



W/O: 10958		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
11.06.20	100	BEND AS SHOWN IN ATTACHED SKETCH, USE OTHERWISE SAME AS D2003-011. REF W/O 36282	JS	11/06/21	1	UP 11.06.20 DS1042	S 11/06/22

Part No: D 2003-011A PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Leanne Elsliger

From: David Shepherd [dshepherd@dartaero.com]
Sent: December 11, 2007 11:55 PM
To: 'Leanne Elsliger'
Cc: 'Mike Petsche'
Subject: FW: Visit to Highland

DSI 9399

ECN 1086.

Leanne,

Further to my email below, we need a DSI against D206-570 to cover the changes to the kit. The DSI should be worded something like:

To facilitate installation of the D206-570-145 heating system, the following changes are acceptable:

- a) The AN804-8J tee fitting can be moved to the fwd side of the forward firewall as shown in Figure 1
- b) The DXXXX flexible hose (124F002-8CR-0230) can be installed off the AN804-8J tee fitting and connected to the bleed air particle separator.
- c) The D2005-015 line on the RH side of the valve assembly can be replaced with a D2005-015A line.
- d) The D2005-015 line on the LH side of the valve assembly can be replaced with a D2005-015B line.
- e) An AN815-?D union fitting can be installed between the AN938-8D tee fitting on the RH side of the D206-570-049 valve assembly and the new D2005-015A line.
- f) The D2003-037 line can be replaced with a D2003-037A line.
- g) The D2003-011 line can be replaced with a D2003-011A line.
- h) The DXXXX plates can be installed using the existing nut plates for the vertical tunnel cover as shown in Figure 2 and used to secure the heater line in the vertical tunnel

The following DSI 9XXX-011 kit is available to facilitate these changes:

- 1 x DXXXX flexible hose (on order)
- 1 x D2005-015A line (on order)
- 1 x D2005-015B line (on order)
- 1 x AN815-?D union (need to figure out exactly what we need)
- 1 x D2003-037A line (made)
- 1 x D2003-011A line (need to make)
- 3 x DXXXX plates (need to make)

I will send you Figures 1 and 2 by fax.

Thanks,
David

From: David Shepherd [mailto:dshepherd@dartaero.com]
Sent: Tuesday, December 04, 2007 1:09 AM
To: 'Mike Petsche'
Cc: 'David Crowston'; 'Bill Beckett'; 'Peggy McDonald'; 'Heather Mahon'; 'Holly Menard'; 'mbellavance@dartaero.com'; 'L Lacelle'; 'Mike O'Reilly'; 'Dan Stow'
Subject: Visit to Highland

Good morning,

I feel I had a productive visit with Highland. I spent about 4 hours with Derek Barker, who has been struggling to install the 570/571 heater kits in a 206L3.

Most of all, I think Highland was just happy to have someone in their hangar to see the problems they were having. Personally, I don't think they have been as creative as they could have been to make the kit work, but at the same time, why should they be. I certainly learned a lot more about our heater kits and the challenges faced

12/12/2007

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

by the installer.

The following is a summary of what Highland thinks we need to do to make these installations work and based on what I saw, I would agree:

570 kit

- ✓ - need to move the "T" fitting to the fwd side of the fwd firewall for compatability with the particle seperator
- need to add a 124F002-8CR-0230 flex line to the heater kit for compatability with the particle seperator
- 37A - need to remove 1" off the top end of the D2003-037 line and modify the bend so that the line stays within the cowlings (template to follow)
- 38A - the D2005-015 line on the RH side of the valve assembly needs to have the offset removed from the end fittings
- a union is required between the T-fitting and the D2005-015 on the RH side of the valve assembly
- 38B - the D2005-015 line on the LH side needs a 45 degree fitting on one end instead of a 90 degree fitting
- 39A - the D2003-011 line requires that the distance to the first bend be reduced by 1" to prevent chafing but the overall length of the line should not change
- ✓ - we should provide 3 x 6.25" x 0.75" x 0.050" thick plates for securing the line in the vertical tunnel.

571 kit

- the installation of the cable is a bit of a mystery on the 206L series. The drawing doesn't reflect what's in a 206L. I am going to try to get some photos from Alpine. According to Mike Mallon, Alpine ran this cable down the door sill instead of underneath the roof ducting.

I recognize that this is all a bit difficult to understand without sketches and pictures. I will try to get these to you ASAP.

In the meantime, we need to order the 124F002-8CR-0230 flex line from Aviall and the two modified D2005-015 lines ASAP (these will need to be different p/n) so that Highland can carry on with the installation. These are the longer lead time items because they have to be ordered. I believe the rest can be made in-house. Highland needs the heater installed by the end of the year, so we better get cracking.

David

No virus found in this outgoing message.

Checked by AVG Free Edition.

Version: 7.5.503 / Virus Database: 269.16.13/1164 - Release Date: 12/2/2007 11:30 AM

No virus found in this outgoing message.

Checked by AVG Free Edition.

Version: 7.5.503 / Virus Database: 269.17.0/1180 - Release Date: 12/10/2007 2:51 PM

make modified 2003-011

12/12/2007

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries